

**CLAIMS 1-3 AND 8-9 ARE REJECTED UNDER 35 U.S.C. § 102 AS BEING ANTICIPATED BY
TERUI, U.S. PATENT NO. 6,225,694**

On pages two and three of the Office Action, the Examiner asserted that Terui discloses a semiconductor device corresponding to that claimed. This rejection is respectfully traversed.

Although the Examiner referred to Fig. 1 of Terui to teach the claimed invention, Fig. 1 of Terui fails to identically disclose the claimed limitations recited in independent claims 1 and 2. Claim 1 recites that the areas of the second terminals correspond to at least all of the areas of the first terminals. This limitation, however, is not disclosed by Fig. 1 of Terui, since certain of the pads 2 (i.e., the asserted first terminals) are located in areas that do not correspond to where the interconnections 7 (i.e., the asserted second terminals) are located. Thus, not all of the areas of the pads 2 have corresponding interconnections 7.

Claim 2 recites that each of the second terminals is in an area not corresponding to areas of the first terminals. This limitation is also not disclosed by Fig. 1 of Terui, which shows interconnections 7 (i.e., the asserted second terminals) located in areas that correspond to where the pads 2 (i.e., the asserted first terminals) are located. Therefore, not each of the areas of the interconnections 7 is located in an area not corresponding to areas of the pads 2. Thus, Terui fails to identically disclose the claimed invention, as recited in claims 1 and 2, within the meaning of 35 U.S.C. § 102.

As to claim 3, the Examiner referred to feature 6 in Terui as disclosing the claimed dummy terminals. In response, Applicants note that feature 6 in Terui is disclosed as a pad, which is

connected to bumps 18. Since the pad 6 is functional, this feature is not a dummy terminal, given this term's ordinary and customary meaning to one of ordinary skill in the art. Thus, Applicants respectfully submit that claim 3 further distinguishes the claimed invention over Terui. Applicants, therefore, respectfully submit that the imposed rejection of claims 1-3 and 8-9 under 35 U.S.C. § 102 for lack of novelty as evidenced by Terui is not factually viable and, hence, solicit withdrawal thereof.

CLAIMS 4-7 ARE REJECTED UNDER 35 U.S.C. § 102 AS BEING ANTICIPATED BY
APPLICANTS' ADMITTED PRIOR ART (HEREINAFTER THE ADMITTED PRIOR ART) IN VIEW OF
TAGUCHI, ET AL., U.S. PATENT NO. 6,537,855 (HEREINAFTER TAGUCHI)

On pages four and five of the Office Action, the Examiner asserted that one having ordinary skill in the art would have been motivated to modify the Admitted Prior Art in view of Taguchi to arrive at the claimed invention. This rejection is respectfully traversed.

With regard to claim 4, the Examiner asserted that Taguchi teaches that "the height of bump (6,7) fit equally to the different height of electrode (3, 4)." Notwithstanding the Examiner's assertion that electrodes 3, 4 of Taguchi have different heights, Applicants respectfully disagree.

Taguchi specifically states that "[t]he electrodes 3, 4 have substantially the same height" (column 3, lines 47-48). As illustrated in Fig. 3F, the heights of the bumps 3, 4 also appear to be identical. Moreover, Taguchi teaches that "[t]he first bump 6 is lower than the second bumps 7 and the difference in height between the first and second bumps is adjusted so as to be greater

than the height of the mesa portion" (column 3, lines 44-47). Thus, when they are mounted (see Fig. 1), the second bumps 7 are in contact with the electrodes but the first bump 6 is not in contact with the electrode 3 directly although the first bump 6 is placed in a position corresponding to the electrode 3. Instead, "[t]he electrical connection between the first bump 6 and the electrode 3 is maintained by a conductive connection member 8" (column 3, lines 52-54). In contrast, the claimed invention first and second bumps contact the first and second terminals and not a conductive connection member therebetween. Therefore, even if the references were combined in the manner suggested by the Examiner, the claimed invention would not result since claim 4 recites that both bumps and electrodes have different heights and the bumps and electrodes contact one another.

Applicants also question the Examiner's asserted motivation (i.e., it would have been obvious ... because it makes a good contact between the chip and the external device) to combine the Admitted Prior Art in view of Taguchi. The connection between the bumps 4c, 4d and the electrode pads 8a, 9a is not described in the Admitted Prior Art as being a problem. Since there is no indication that makes "good contact" with the structure disclosed by the Admitted Prior Art is a problem, there is no realistic reason why would one having ordinary skill in the art modify a device to solve a non-recognized problem.

With regard to claim 5, the Examiner referred to Fig. 8B of the Admitted Prior Art and asserted that:

The bump [4d] may be cut into 2 pieces, so that the bump [4d] is overlapped number of the bumps. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made for at least one of the first and second bumps comprises a plurality of bumps that are overlapped on top of each other because it depends on the height of the internal terminal.

Applicants respectfully disagree. Referring to Fig. 8A of the Admitted Prior Art, which shows the features in Fig. 8B prior to joining, both bumps 4c and 4d have the same height. Only after joining, as illustrated in Fig. 8B, do the bumps 4c and 4d have different heights. The difference in heights is not the result of bump 4d being comprised of multiple overlapping bumps but because of the difference in heights of the surfaces to which the bumps are attached. Therefore, the concept disclosed by Figs. 8A, 8B is completely different than that claimed. Thus, one having ordinary skill in the art would not have been motivated to modify the Admitted Prior Art in the manner suggested by the Examiner since there is no realistic motivation to make such a modification.

For the reasons stated above, Applicants respectfully submit that the imposed rejection of claims 4-7 under 35 U.S.C. § 103 for obviousness based the Admitted Prior Art in view of Taguchi is not viable and, hence, solicit withdrawal thereof.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

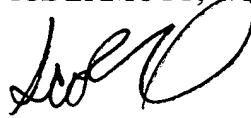
To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Scott D. Paul", written over the firm name.

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